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Tadahiro Ishizaka

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EXAMINER

ZERVIGON, RUDY

ART UNIT

PAPER NUMBER

1792

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/650,087	<b>Applicant(s)</b> ISHIZAKA ET AL.	
	<b>Examiner</b> Rudy Zervigon	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 17-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/24/2007, 4/4/2007</u> .                                     | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi; Tadahihiro et al. (US 6217633 B1) and Beyer; Christian et al. (US 5944049 A) in view of Miyashita, Takeshi et al. (JP 01188684 A). Ohmi teaches a substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) comprising: a treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) in which a substrate (2; Figure 3; column 2; line 10) is to be placed; a supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) configured to supply at least two kinds of treatment gases to said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63); an exhaust system having a pump (36; Figure 3; column 9; line 63 - column 10; line 63), configured to exhaust the treatment gases from said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63); a capturing unit (“remover (detoxicator)” 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30)<sub>2</sub> – claim 1.

Ohmi further teaches:

- i. a substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 1, wherein the fine grains contained in said capturing unit (“remover (detoxicator)” 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) are zeolite (column 7; lines 13-30), as claimed by claim 2. However, applicant’s claim requirements of the capturing unit having “containing fine grains” is

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believed to be a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

- ii. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 1, wherein said capturing unit (“remover (detoxicator)” 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) captures the treatment gas that is liquid or solid at room temperature and at atmospheric pressure, as claimed by claim 3. Applicant’s claim requirement is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

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- iii. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 1, wherein the treatment gas captured by said capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) is at least one of  $\text{TiF}_{\text{sub.4}}$ ,  $\text{TiCl}_{\text{sub.4}}$ ,  $\text{TiBr}_{\text{sub.4}}$ ,  $\text{TiI}_{\text{sub.4}}$ ,  $\text{Ti}[\text{N}(\text{C}_{\text{sub.2H.sub.5CH.sub.3}})_{\text{sub.2}}]_{\text{sub.4}}$ ,  $\text{Ti}[\text{N}(\text{CH}_{\text{sub.3}})_{\text{sub.2}}]_{\text{sub.4}}$ ,  $\text{Ti}[\text{N}(\text{C}_{\text{sub.2H.sub.5}})_{\text{sub.2}}]_{\text{sub.4}}$ ,  $\text{TaF}_{\text{sub.5}}$ ,  $\text{TaCl}_{\text{sub.5}}$ ,  $\text{TaBr}_{\text{sub.5}}$ ,  $\text{TaI}_{\text{sub.5}}$ ,  $\text{Ta}(\text{NC}(\text{CH}_{\text{sub.3}})_{\text{sub.3}})(\text{N}(\text{C}_{\text{sub.2H.sub.5}})_{\text{sub.2}})_{\text{sub.3}}$ ,  $\text{Ta}(\text{OC}_{\text{sub.2H.sub.5}})_{\text{sub.5}}$ ,  $\text{Al}(\text{CH}_{\text{sub.3}})_{\text{sub.3}}$ ,  $\text{Zr}(\text{O}(\text{C}_{\text{sub.4H.sub.9}}))_{\text{sub.4}}$ ,  $\text{ZrCl}_{\text{sub.4}}$ ,  $\text{SiH}_{\text{sub.4}}$ ,  $\text{Si}_{\text{sub.2H.sub.6}}$ ,  $\text{SiH}_{\text{sub.2Cl.sub.2}}$ , and  $\text{SiCl}_{\text{sub.4}}$ , as claimed by claim 4. Applicant's claim requirement is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).
- iv. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 1, further comprising: a supply controller (12; Figure 3; column 9; line 63 - column 10; line 63) configured to control said supply system (61-63, 10; Figure 3; column 9; line 63 - column 10; line 63) to supply the

treatment gases alternately, as claimed by claim 5. Applicant's claim requirement of "to supply the treatment gases alternately" is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

- v. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) comprising: a treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) in which a substrate (2; Figure 3; column 2; line 10) is to be placed; a supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) configured to supply at least two kinds of treatment gases to said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63); an exhaust system having a pump (36; Figure 3; column 9; line 63 - column 10; line 63), configured to exhaust the treatment gases from said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63); and a capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) – claim 6
- vi. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 6, wherein said capturing unit ("remover

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- (detoxicator)” 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) has a metal oxide (column 7; lines 20-30) to capture the treatment gas, as claimed by claim 7
- vii. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 7, wherein the metal oxide (column 7; lines 20-30) is Al.sub.2O.sub.3, as claimed by claim 8
- viii. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 6, further comprising: a supply controller (12; Figure 3; column 9; line 63 - column 10; line 63) configured to control said supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) to alternately supply the treatment gases, as claimed by claim 9. Applicant’s claim requirement of “to supply the treatment gases alternately” is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).
- ix. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) comprising: a treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) in which a substrate (2; Figure 3; column 2; line 10) is to be placed; a

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supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) configured to supply at least two kinds of treatment gases to said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63); an exhaust system having at least one pump (36; Figure 3; column 9; line 63 - column 10; line 63), configured to exhaust the treatment gases from said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63), an inert gas (column 3; lines 65-67) supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) configured to supply an inert gas (column 3; lines 65-67) into said exhaust system; Ohmi's capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) configured to capture by a chemical action at least one kind of the treatment gas exhausted from said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) – claim 10

- x. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 10, wherein the inert gas (column 3; lines 65-67) includes at least one of Ar, He, and N.sub.2, as claimed by claim 11
- xi. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 10, wherein the treatment gases include at least one of TiF.sub.4, TiCl.sub.4, TiBr.sub.4, TiI.sub.4, Ti[N(C.sub.2H.sub.5CH.sub.3).sub.2].sub.4, Ti[N(CH.sub.3).sub.2].sub.4, Ti[N(C.sub.2H.sub.5).sub.2].sub.4, TaF.sub.5, TaCl.sub.5, TaBr.sub.5, TaI.sub.5, Ta(NC(CH.sub.3).sub.3)(N(C.-sub.2H.sub.5).sub.2).sub.3, Ta(OC.sub.2H.sub.5).sub.5, Al(CH.sub.3).sub.3, Zr(O-t(C.sub.4H.sub.9)).sub.4, ZrCl.sub.4, SiH.sub.4, Si.sub.2H.sub.6, SiH.sub.2Cl.sub.2, and SiCl.sub.4, as claimed by claim 12. Applicant's



claim requirement is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

- xii. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 10, further comprising: a supply controller (12; Figure 3; column 9; line 63 - column 10; line 63) configured to control said supply system (61-63, 10; Figure 3; column 9; line 63 - column 10; line 63) to alternately supply the treatment gases, as claimed by claim 13. Applicant's claim requirement of "to supply the treatment gases alternately" is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the

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claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

Ohmi does not teach:

- i. Ohmi's capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) *interposed* between said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) and said pump (36; Figure 3; column 9; line 63 - column 10; line 63) and containing fine grains, the capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) configured to capture by the fine grains at least one kind of the treatment gas exhausted from said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63); a trap with a cooled plate member therein provided on an upstream side of said capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30), the trap configured to physically absorb powder – claim 1,6. However, applicant's claim requirements of the capturing unit having "containing fine grains" is believed to be a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

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- ii. an inert gas (column 3; lines 65-67) supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) configured to supply an inert gas (column 3; lines 65-67) into said exhaust system that is on a *downstream* side of the pump (36; Figure 3; column 9; line 63 - column 10; line 63) on a final stage; a trap with a cooled plate member therein provided on an upstream side of said capturing unit (“remover (detoxicator)” 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30), the trap configured to physically absorb powder - claim 10
- iii. Ohmi’s capturing unit (“remover (detoxicator)” 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30), *interposed* between Ohmi’s treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) and Ohmi’s pump (36; Figure 3; column 9; line 63 - column 10; line 63) – claim 10

Beyer teaches an apparatus for regulating pressure in a semiconductor process chamber (Figure 12; column 1; lines 7-20) including plural vacuum pumps (2,4; Figure 12; column 1; lines 7-20) and gas injection downstream of Beyer’s vacuum pump (2; Figure 12; column 1; lines 7-20).

Miyashita also teaches a similar apparatus for regulating pressure in a semiconductor process chamber (1; Figure 2) including plural vacuum pumps (4,7a; Figure 2). Miyashita further teaches a trap (5; Figure 2 – “powder trap 5”) with a cooled plate member (not numbered – compare 3,5 with 45,45b of Applicant’s Figure 2), the trap configured to physically absorb powder (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Ohmi to add an additional vacuum pump downstream of Ohmi’s capturing unit (“remover (detoxicator)” 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) and gas injection, as taught by Beyer.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made for Ohmi to add Miyashita's powder trap (5; Figure 2 – "powder trap 5").

Motivation for Ohmi to add an additional vacuum pump downstream of Ohmi's capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) and gas injection is, as taught by Beyer, is for reaction chamber pressure control as taught by Beyer (column 10; lines 54-60) and increasing semiconductor process throughput as taught Beyer (column 1; lines 59-64).

Motivation for Ohmi to add Miyashita's powder trap (5; Figure 2 – "powder trap 5") is for controlling the formation of corrosive materials in a cooling trap as taught by Miyashita (abstract).

3. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi; Tadaihiro et al. (US 6217633 B1), Beyer; Christian et al. (US 5944049 A), Hayashi; Kazuichi et al. (US 5879139 A) and Miyashita, Takeshi et al. (JP 01188684 A). Ohmi, Beyer, and Miyashita are discussed above. Ohmi further teaches:

- i. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) comprising: a treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) in which a substrate (2; Figure 3; column 2; line 10) is to be placed; a supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) configured to supply at least two kinds of treatment gases into said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63); an exhaust system having at least one pump (36; Figure 3; column 9; line 63 - column 10; line 63), configured to exhaust the treatment gases from said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63),

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Ohmi's capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30) configured to capture by a chemical action at least one kind of the treatment gas exhausted from said treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) – claim 14

- ii. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 14, wherein the treatment gases include at least one of  $\text{TiF.sub.4}$ ,  $\text{TiCl.sub.4}$ ,  $\text{TiBr.sub.4}$ ,  $\text{TiI.sub.4}$ ,  $\text{Ti[N(C.sub.2H.sub.5CH.sub.3).sub.2].sub.4}$ ,  $\text{Ti[N(CH.sub.3).sub.2].sub.4}$ ,  $\text{Ti[N(C.sub.2H.sub.5).sub.2].sub.4}$ ,  $\text{TaF.sub.5}$ ,  $\text{TaCl.sub.5}$ ,  $\text{TaBr.sub.5}$ ,  $\text{TaI.sub.5}$ ,  $\text{Ta(NC(CH.sub.3).sub.3)(N(C.sub.2H.sub.5).sub.2).sub.3}$ ,  $\text{Ta(OC.sub.2H.sub.5).sub.5}$ ,  $\text{Al(CH.sub.3).sub.3}$ ,  $\text{Zr(O-t(C.sub.4H.sub.9)).sub.4}$ ,  $\text{ZrCl.sub.4}$ ,  $\text{SiH.sub.4}$ ,  $\text{Si.sub.2H.sub.6}$ ,  $\text{SiH.sub.2Cl.sub.2}$ , and  $\text{SiCl.sub.4}$ , as claimed by claim 15. Applicant's claim requirement is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

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- iii. A substrate (2; Figure 3; column 2; line 10) treatment device (Figure 3; column 9; line 63 - column 10; line 63) as set forth in claim 14, further comprising: a supply controller (12; Figure 3; column 9; line 63 - column 10; line 63) configured to control said supply system (61-63,10; Figure 3; column 9; line 63 - column 10; line 63) to supply said treatment gases alternately, as claimed by claim 16. Applicant's claim requirement of "to supply the treatment gases alternately" is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Ohmi and Beyer do not teach:

- i. Ohmi's capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30), *interposed* between Ohmi's treatment chamber (1; Figure 3; column 9; line 63 - column 10; line 63) and Ohmi's pump (36; Figure 3; column 9; line 63 - column 10; line 63) – claim 14
- ii. a trap with a cooled plate member therein provided on an upstream side of said capturing unit ("remover (detoxicator)" 73; Figure 3; column 5; lines 35-40; column 7; lines 20-30), the trap configured to physically absorb powder - claim 14

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- iii. a heater configured to heat said exhaust system that is on a downstream side of the pump (36; Figure 3; column 9; line 63 - column 10; line 63) on a final stage – claim 14

As Beyer, Hayashi also teaches an apparatus for regulating pressure in a semiconductor process chamber (Figure 1; column 3 line 61 – column 4; line 10) including plural vacuum pumps (72,4; Figure 1; column 3 line 61 – column 4; line 10). Hayashi further teaches a heater (66; Figure 1; column 3 line 61 – column 4; line 10) configured to heat said exhaust system (system below 2; Figure 1) that is on a downstream side of the pump (4; Figure 1; column 3 line 61 – column 4; line 10).

Miyashita also teaches a similar apparatus for regulating pressure in a semiconductor process chamber (1; Figure 2) including plural vacuum pumps (4,7a; Figure 2). Miyashita further teaches a trap (5; Figure 2 – “powder trap 5”) with a cooled plate member (not numbered – compare 3,5 with 45,45b of Applicant’s Figure 2), the trap configured to physically absorb powder (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Ohmi and Beyer to add Hayashi’s exhaust heater to the apparatus of Ohmi and Beyer as taught by Hayashi.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Ohmi to add Miyashita’s powder trap (5; Figure 2 – “powder trap 5”).

Motivation for Ohmi and Beyer to add Hayashi’s exhaust heater to the apparatus of Ohmi and Beyer as taught by Hayashi is for preventing the exhaust gases from condensing to liquid as taught by Hayashi (column 5; line 55 – column 6, line 3).

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Motivation for Ohmi to add Miyashita's powder trap (5; Figure 2 – "powder trap 5") is for controlling the formation of corrosive materials in a cooling trap as taught by Miyashita (abstract).

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new grounds of rejection.

5. In response the Applicant's request for varification/signature of Applicant's "July 30, 2007" IDS, the Examiner has resubmitted signed 1449s of prior submitted IDS that do not appear to have been conveyed during prosecution. It is believed that all submitted IDS have been reviewed and each have signed 1449s recorded in the file history.

6. Applicant's arguments at pages 9-11 of the June 20, 2008 amendment is centered on the prior art's teachings relative to the newly amended claims. In response, the Examiner's updated search includes a teaching by Miyashita, Takeshi et al. (JP 01188684 A) which provides motivation for the above-proposed combination.

### ***Conclusion***

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period



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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1792 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

/Rudy Zervigon/

Primary Examiner, Art Unit 1792